



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/669,348	09/25/2003	Jong Dam Kim	2658-0310P	6627
2292	7590	11/19/2004	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			NGUYEN, JIMMY	
			ART UNIT	PAPER NUMBER
			2829	

DATE MAILED: 11/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/669,348

Applicant(s)

KIM ET AL.

Examiner

Jimmy Nguyen

Art Unit

2829

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☒ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 – 3, 8, 9, 14 – 16, 19 – 22, 25 – 27, 30 – 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Henley (US 5073754).

**As to claims 1, 19,** Henley discloses (fig 2) a method and apparatus of inspecting a flat display device having a plurality of signal wires, comprising:  
scanning one or more signal wires by using a magnetic sensor (40); and  
detecting a resistance change (abstract, or column 3 lines 69 and column 4 lines 1 – 7) of the magnetic sensor (40) to perceive a short in the signal wire or defect in electrode pattern.

**As to claims 14, 30,** Henley discloses (fig 2) a method and apparatus of inspecting a flat display device having a plurality of signal wires, comprising:  
scanning an electrode pattern (16, 14) by using a sensor array including one or more magnetic sensors (40) below a pixel (12) in size; and  
detecting a resistance change (abstract, or column 3 lines 69 and column 4 lines 1 – 7) of the magnetic sensor (40) to perceive defect in electrode pattern.

**As to claims 8, 25**, Henley discloses (fig 2) a method and apparatus of inspecting a flat display device having a plurality of signal wires, comprising:

scanning one of more second signals wires (14, 16) stacked over at least one of first signal wires, the first and second signal wires being separated by an insulation layer; and

detecting a resistance change (abstract, or column 3 lines 69 and column 4 lines 1 – 7) of the magnetic sensor to perceive an interlayer short between the first and the second signal wires.

**As to claims 2, 9, 15**, Henley discloses (fig 2) the method according to claims 1, 8, 14 respectively, wherein detecting the resistance change of the magnetic sensor (40) comprises:

detecting the resistance of the magnetic sensor (40) depending on the change of current (abstract) flowing in the magnetic sensor (40); and

determining the short in the signal wire if the resistance of the magnetic sensor (40) is larger than a designated reference value.

**As to claims 3, 16, 22, 33**, Henley discloses (fig 2) the method and apparatus according to claims 1, 14, 19, 30 respectively further comprising applying different voltages to adjacent signal wires or electrode pattern.

**As to claims 20, 26, 31**, Henley discloses (fig 2) the method and apparatus according to claims 19, 25, 30 respectively the magnetic sensor comprise a magneto resistance sensor (40).

**As to claims 21, 27, 32**, Henley discloses (fig 2) the apparatus according to claims 20, 25, 30 respectively the detecting the circuit detects the resistance of the magnetic sensor with a change of current (abstract, or column 3 lines 69 and column 4 lines 1 – 7) flowing to the magnetic sensor.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4 – 7, 10 – 13, 17, 18, 23, 24, 28, 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over (US 5073754) as applied to claims 1, 8, 14, 19, 25, 30 above and further in view of Kwon et al (US 6566902).

**As to claims 4, 10, 23, 28**, Henley discloses (fig 2) everything except for the method according to claims 3, 8, 22, 25, wherein applying the different voltages to the adjacent signal wires comprises: applying a first common voltage to odd-numbered signal wires; and applying a second common voltage to even-numbered signal wires.

On the other hand, Kwon et al teach (fig 3) the method of wherein applying the different voltages to the adjacent signal wires comprises: applying a first common voltage to odd-numbered signal wires (DATA ODD); and applying a second common voltage to even-numbered signal wires (DATA EVEN).

It would have been obvious to one having an ordinary skill in the art at the time of the invention was made to connect different voltage to different wires for the purpose of detecting resistance changed.

**As to claims 5, 11, 24, 29,** Henley discloses (fig 2) the method and apparatus according to claims 4, 8, 23, 25 respectively wherein the magnetic sensor (40) scans the signal wire on pads connected to an other side of the signal wires.

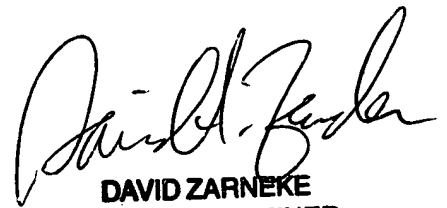
**As to claims 6, 12, 17,** Henley discloses (fig 2) the method and apparatus according to claims 1, 8, 14 respectively wherein the magnetic sensor (40) includes a hard magnetic layer and a soft magnetic layer, and wherein the magnetization direction of the soft magnetic layer is changed depending on an induced magnetic field from the signal wire.

**As to claims 7, 13, 18,** Henley discloses (fig 2) the method and apparatus according to claims 6, 12, 17 respectively wherein perceiving the short of the signal wire includes determining the short in the signal wire when a primary magnetization direction of the soft magnetic layer is inverted (this is the characteristic of the magnetic sensor).

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy Nguyen at (571) 272-1965. Any inquiry of a general nature of relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-2900.

JN.  
Nov 11, 2004

  
**DAVID ZARNEKE**  
**PRIMARY EXAMINER**  
11/12/04